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NOTES

MORTALITY STATISTICS: 1905

The sixth annual report of the Census Bureau publishes mortality statistics for the year 1905 and contains revised rates for the years 1901-4. Revision of the rates is based upon censuses taken in 1904-5 in four states lying within the registration area, and in nine non-registration states. Some progress may be noted in the direction of securing completer mortality data. In this work the Federal Census Bureau is dependent upon state and municipal agencies, since it has no means of registering deaths directly. The registration area, within which approximately adequate provision is made, either by state law or by municipal ordinances, for registration of deaths, has been somewhat extended during the last year by the inclusion of five additional states—California, Colorado, South Dakota, Pennsylvania, and Maryland—containing a population in 1900 of nearly ten million. For the period covered by the present report, however, the area remained practically as it stood in 1900, being confined to ten states, the District of Columbia, and 134 registration cities located in non-registration states. Eight of these ten states were located in the North Atlantic division, and two, Indiana and Michigan, in the North Central division, leaving the entire West and South unrepresented, except for returns made by the few scattered registration cities, which were quite inadequate as a basis for estimating mortality outside the registration states.

The population of the registration area in 1905, including the registration cities, is estimated to have been 33,757,811, or approximately two-fifths of the total population of the country. No reliable mortality data whatever were available for some three-fifths of our population living outside this area. Assuming that the work of registering mortality data within the registration area has been done with a fair degree of accuracy and completeness, the condition of non-registration obtaining over so large a portion of the country and for so large a portion of our population, tends to vitiate the data available for the registration area itself. This follows from the fact that no account can be taken by the Census Bureau of migratory movements from state to state, or from rural into urban

districts. The age and sex distribution of the population within and without the registration area is so uncertain that the Census Bureau does not venture any estimates.

Furthermore, for the registration area lying outside those states which have provided for the taking of a state census—that is to say, for six out of the ten registration states—the population itself is unknown and a matter of estimate, and the estimate of population within these states necessarily embraces each year a wider margin of error. The progressive inaccuracy of the estimate is evident in the rates for 1901–5 in those states which have taken a census in 1905. An estimate of population in any given state in 1908 or 1909, based upon the census returns of 1900 may obviously fall so wide of the mark as completely to invalidate all calculations of mortality.

It is hardly necessary to remark that the registration of deaths, even on the assumption that the registration is complete and accurate for a restricted area and for scattered urban communities, does not afford a basis for the calculation of mortality rates, nor even for a crude death-rate, where not only the age and sex constitution of the population is unknown, but even the population itself is a matter of uncertain estimate. In view of these conditions, the Census Bureau is quite properly devoting its energies to securing further co-operation of the states in the collection of mortality data. Progress depends upon extension of the registration area, upon adoption of uniform methods of registration, and upon provision for state censuses. In the achievement of this work the federal government would seem quite justified in extending, as has been suggested, some financial aid to the states, on the understanding that the work be done under supervision of the federal bureau.

The extent of the uncertainty at present attaching to mortality-rates for the registration area may be indicated briefly, in connection with a statement taken from a report of the director of the census to the secretary of commerce and labor. In all thirteen states took intercensal enumerations of their population in 1904–5, nine of these being outside the registration area. The director of the census felicitates the bureau upon the correspondence of the enumerated with the estimated population:

The total population returned by these state censuses was 25,793,236. The Census Bureau estimate of the population of these states for 1905 was

25,743,311, the estimate being below the actual enumeration by 49,925, or 0.019 [sic] per cent.; that is less than two-tenths of 1 per cent. While in individual states the estimate varies from 8.2 per cent. above to 12.8 below the figures of the actual enumeration, in two-thirds of the states it was within 4 per cent. of true figures.

This would seem to be a sufficient justification of the bureau's method of estimating the movement or growth of population for the country as a whole, but it is far from being a satisfactory showing as regards mortality data. For separate states the estimated population varied from the "true" figures in 1905, from 8.2 per cent. below to 12.8 per cent. above enumeration returns, or a total margin of error of 21.0 per cent. If the further fact be taken into account that the enumeration returns themselves may be in error possibly 2 per cent., the total margin of error in the Census Bureau estimate is still greater. The state returning an enumerated population 12.8 per cent. in excess of the Census Bureau estimate may have fallen short in its enumeration 2 per cent., in which case the actual population might exceed the estimated population 14.8 per cent. instead of 12.8 per cent. On the other hand, the state reporting a population 8.2 per cent. below the estimated population may have had an actual population 10.2 per cent. below the Census Bureau estimate. The margin of error would then amount to 25 per cent. A state population estimated by the Census Bureau to be in 1905, 1,000,000 may have ranged in fact from 750,000 to 1,250,000. If this population registered 20,000 deaths, the estimated death-rate would be 20, while the actual death-rate might be any rate between 15 and 25. The actual mortality-rate for any given population may be regarded as a persistent stubborn rate, which does not greatly vary from year to year, nor yield readily to improved social conditions. The reduction of this rate by a fraction of 1 per cent. in a year or even in a decade must be regarded as a difficult social achievement. Obviously when the margin of error in the census rates is so great as to embrace for any state a variation in the crude death-rate from 15 to 25, such rates are comparatively insignificant as indexes of mortality. When the further fact is considered that our population is a shifting immigrant population, manifesting highly abnormal and shifting age and sex constitutions, the inadequacy of our mortality data becomes still more apparent. Uncertainty attaches in a marked degree to returns for isolated urban communities,

where migratory movements are especially disturbing, and where industrial and social conditions may have induced great changes in the physical character of the population in the course of a few years.

It is a peculiarity of vital statistics that little value attaches to them until they are made complete and accurate in every respect. A mortality-rate is the function of several variables. It does not depend any more upon the registration of deaths than upon enumeration and age and sex classification of population. Number of deaths has no significance whatever, if the population is uncertain, or if its age and sex constitution is unknown. Until our states, or the federal government, can be induced to undertake systematically the registration of deaths, and to provide for more frequent enumerations of population no scientific value can attach to our mortality statistics. Perhaps the most serious criticism that ought to be preferred against the Census Bureau is that it does not in its publications sufficiently emphasize the invalidity and incompleteness of its own mortality data.

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